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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/073,312	02/13/2002	Tetsuo Sasaki	ASA-1062	4469

7590 03/30/2004  
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EXAMINER

DIMYAN, MAGID Y

ART UNIT	PAPER NUMBER
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2825

DATE MAILED: 03/30/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/073,312	SASAKI ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Magid Y Dimyan	2825	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 13 February 2002.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-15 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 13 February 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☒ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>03/17/2004</u> . | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Priority***

1. Acknowledgment is made of applicant's claim for foreign priority based on an application filed in the U.S. on 13 February 2002. It is noted, however, that applicant has not filed a certified copy of the Japanese application as required by 35 U.S.C. 119(b).

### ***Specification***

2. The title of the disclosure is objected to because of the following informalities: the title should be narrowed down to the Applicants' specific design system and method.  
Appropriate correction is required.

### ***Claim Objections***

3. Claim 9 and 10 are objected to because of the following informalities: The term NG has not been clearly described in the specification or the claims, and it is not very clear to the Examiner what NG really stands for. Furthermore, the Examiner does not

understand the formula and relationships as stated in claim 10, line 9. Appropriate correction is required.

4. Claims 13 and 15 are objected to because of the following informalities: the Examiner fails to comprehend the formulas and relationships as recited in claim 13, lines 8 – 11. Furthermore, the Examiner does not understand the phrase included in claim 15, lines 16 – 19 which reads as follows: “and a path along which data transmission is impossible in said target machine cycle or a closed loop including the path is displayed in order to be modified”. Appropriate correction is required.

5. Claims 1, 5, 9 and 15 are objected to because of the following informalities: in claim 1, line 16, delete “inputting” and insert --input--. In claim 5, line 5, delete “can not be”, and insert --is not--. In claim 9, line 7, delete “information 2” and insert --information in file 2--. In claim 15, line 14, delete “the adjustable” and insert --an adjustable--. Appropriate correction is required.

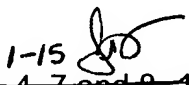
6. Claim 6 is objected to because of the following informalities: the Applicant claims “the modification of the delay time of flip-flop-to-flip-flop signal propagation”, but fails to specify which delay time – maximum delay or minimum delay. Appropriate correction is required.

7. Claim 9 is objected to because of the following informalities: on line 14, the limitation of "inputting data of said information files" is claimed. However that claim does not specify or include data of said information in any portion of that claim. Appropriate correction is required.

### ***Claim Rejections - 35 USC § 112***

8. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

9.  Claims ~~1, 4, 7 and 8-15~~ are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

10. Regarding claims 1 and 8 (eighth lines), the phrase "or the like" renders the claims indefinite because the claims include elements not actually disclosed (those encompassed by "or the like"), thereby rendering the scope of the claim(s) unascertainable. See MPEP § 2173.05(d).

11. Claim 4 recites the limitation "said obtained clock time". Claim 7 recites the limitation of "the value of said target machine cycle". Claim 15 recites the limitation of "an adjustable range of clock timing". There is insufficient antecedent basis for these limitations in the claims.

12. Regarding claims 9 and 12, the phrase "capable of being" renders the claims indefinite because it is unclear whether the limitations following the phrase are part of the claimed invention. See MPEP § 2173.05(d).

### ***Claim Rejections - 35 USC § 102***

13. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

14. Claims 1 – 3 and 8 are rejected under 35 U.S.C. 102(e) as being anticipated by U.S. Patent No. 6,367,060 to Cheng et al (hereinafter, Cheng).

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15. Referring to claim 1, Cheng cites a method for designing an IC consisting of (a) dividing the chip into a number of clusters (i.e., areas) and providing clock pins in these clusters (see column 2, lines 1 – 27; column 5, lines 48 – 52); (b) performing clock signal distribution from a clock source to each of the clusters (see Fig. 5); (c) performing adjustment of clock timing for each flip-flop to flip-flop transmission to meet system clock frequency requirements (see Fig. 5; column 9, lines 12 – 24); and (d) balancing the timing by balancing the flip-flops via grouping them together (Figs. 4 and 5; column 4, line 30 to column 5, line 67). Thus, Cheng recites all the elements claimed herein.

16. As per claim 2, see column 4, lines 46 – 48; column 10, lines 17 – 19, which show how the length of a transmission path (i.e., extending wiring length) can affect the propagation delays (i.e., can be used to adjust timing) as claimed herein.

17. Referring to claim 3, see (6) and (7) above, as well as column 4, lines 38 – 45; column 3, lines 38 – 67, which recite other ways of adjusting timing, as claimed.

18. As for claim 8, see (6) above, as well as Fig. 6; column 7, line 59 to column 10, line 33, which recite all the elements of the claim, including means for adjusting clock timing and means for displaying signal propagation paths (closed loops), as claimed herein.

### ***Conclusion***

19. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

U.S. Patent No. 5,519,351 to Matsumoto teaches a synchronous IC that includes a plurality of functional blocks, whereby the functional blocks are divided into segments, each of these segments is further divided into classes whose number is dependent upon the density of the functional blocks within each of the segments.

U.S. Patent No. 6,543,042 to Kato et al provides a layout method in design of an IC having clock tree paths whereby the method includes: extracting delay values of all clock tree paths; calculating average delay value from the extracted delay values; comparing each of the delay values to the average delay value; and carrying out a batch-substituted process to equalize the delays.

U.S. Patent No. 6,351,840 to Teng et al cites an IC in which a set of K times N clocked IC devices ("syncs") such as flip-flops or latches are organized into K clusters of N syncs each, with each cluster being clocked by a separate clock tree buffer; whereby an improvement to a conventional "K-center" method for assigning syncs to clusters is disclosed.




Any inquiry concerning this communication or earlier communications from the examiner should be directed to Magid Y Dimyan whose telephone number is (571) 272-1889. The examiner can normally be reached on Monday - Friday 8:00 AM - 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matthew S Smith can be reached on (571) 272-1907. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Magid Y Dimyan  
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Art Unit 2825

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A. M. Thompson  
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